

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
11 December 2003 (11.12.2003)

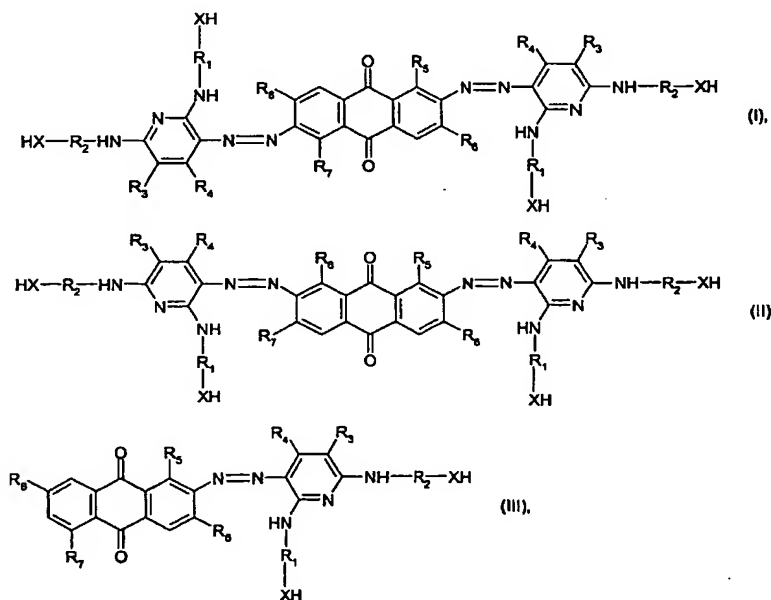
PCT

(10) International Publication Number
WO 03/102083 A1

- (51) International Patent Classification⁷: C09B 29/01, 35/039, 35/031, 69/10 // G02B 5/20
- (21) International Application Number: PCT/EP03/05562
- (22) International Filing Date: 27 May 2003 (27.05.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data:
02405444.7 3 June 2002 (03.06.2002) EP
- (71) Applicant (for all designated States except US): CIBA SPECIALTY CHEMICALS HOLDING INC. [CH/CH]; Klybeckstrasse 141, 4057 Basel (CH).
- (72) Inventors; and
(75) Inventors/Applicants (for US only): TZIKAS, Athanasios [CH/CH]; Unterer Rüttschetenweg 36, CH - 4133 Pratteln (CH). CLEMENT, Antoine [CH/CH]; Laufenburgerstrasse 2/5, CH-4058 Basel (CH). LAUK, Urs [CH/CH]; Alfred-Strebelweg 15, CH-8047 Zürich (CH).
- (74) Common Representative: CIBA SPECIALTY CHEMICALS HOLDING INC.; Klybeckstrasse 141, 4057 Basel (CH).
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:
— with international search report

[Continued on next page]

(54) Title: ANTHRAQUINONE-AZO DYES



(57) Abstract: The present invention relates to an azo dye of formula I, II or III: (formula I, II or III); wherein R₁ and R₂ are each independently of the other one or more divalent groups selected from alkylene, arylene, aralkylene and cycloalkylene, which may be interrupted by -O-, -S-, -NH-, -NR₈-, -COO-, -CONH- or -CONR₉-, wherein R₈ and R₉ are alkyl or aryl, X is -O- or -NH-, R₃ is -CN or -CONH₂, R₄ is methyl or trifluoromethyl and R₅, R₆, R₇ and R₈ are each independently of the others hydrogen, halogen or -CN, to a process for the preparation thereof and to the use thereof in a method of producing mass-coloured plastics or polymeric colour particles.

WC 03/102083 A1



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

PATENT COOPERATION TREATY

PCT

INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)

Applicant's or agent's file reference PL/24-22689	FOR FURTHER ACTION see Notification of Transmittal of International Search Report (Form PCT/ISA/220) as well as, where applicable, item 5 below.	
International application No. PCT/EP 03/ 05562	International filing date (day/month/year) 27/05/2003	(Earliest) Priority Date (day/month/year) 03/06/2002
Applicant CIBA SPECIALTY CHEMICALS HOLDING INC.		

This International Search Report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This International Search Report consists of a total of 3 sheets.

☒ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

- a. With regard to the **language**, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ the international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

- b. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international search was carried out on the basis of the sequence listing :

☐ contained in the international application in written form.

☐ filed together with the international application in computer readable form.

☐ furnished subsequently to this Authority in written form.

☐ furnished subsequently to this Authority in computer readable form.

☐ the statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.

☐ the statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished

2. ☐ **Certain claims were found unsearchable** (See Box I).

3. ☐ **Unity of invention is lacking** (see Box II).

4. With regard to the **title**,

☐ the text is approved as submitted by the applicant.

☒ the text has been established by this Authority to read as follows:

ANTHRAQUINONE-AZO DYES

5. With regard to the **abstract**,

☒ the text is approved as submitted by the applicant.

☐ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box III. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. The figure of the **drawings** to be published with the abstract is Figure No.

☐ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

☐ None of the figures.

INTERNATIONAL SEARCH REPORT

International Application No

PCT/EP 01/0562

A. CLASSIFICATION OF SUBJECT MATTER

IPC 7 C09B29/01 C09B35/039 C09B35/031 C09B69/10 //G02B5/20,
G02F1/1335

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 C09B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 4 146 535 A (DEHNERT JOHANNES ET AL) 27 March 1979 (1979-03-27) column 2, line 7 -column 5, line 19; examples 9,39-43 ----	1-11
A	US 5 367 039 A (YABUUCHI NAOYA ET AL) 22 November 1994 (1994-11-22) cited in the application claims; examples ----	1-11
A	GB 1 461 899 A (CIBA-GEIGY AG.) 19 January 1977 (1977-01-19) page 4, line 62 -page 5, line 16; claims 1,2,4-6,8-12,14-18; examples 17-31,33-37,40,41,46 -----	1-11

☐ Further documents are listed in the continuation of box C.☒ Patent family members are listed in annex.

* Special categories of cited documents :

A document defining the general state of the art which is not considered to be of particular relevance

E earlier document but published on or after the international filing date

L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

O document referring to an oral disclosure, use, exhibition or other means

P document published prior to the international filing date but later than the priority date claimed

T later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

X document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

Y document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

G document member of the same patent family

Date of the actual completion of the international search

22 August 2003

Date of mailing of the international search report

29/08/2003

Name and mailing address of the ISA

European Patent Office, P.B. 5818 Patentlaan 2
NL - 2280 HV Rijswijk
Tel. (+31-70) 340-2040, Tx. 31 651 epo nl,
Fax: (+31-70) 340-3016

Authorized officer

Ginoux, C

INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/EP 07/00562

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
US 4146535	A	27-03-1979	AT 373930 B	12-03-1984
			AT 822375 A	15-07-1983
			CH 609722 A5	15-03-1979
			DE 2640576 A1	12-05-1977
			FR 2329724 A1	27-05-1977
			GB 1561772 A	05-03-1980
			IT 1080516 B	16-05-1985
			JP 1296047 C	26-12-1985
			JP 52059789 A	17-05-1977
			JP 60015756 B	22-04-1985
			US 4150943 A	24-04-1979
US 5367039	A	22-11-1994	JP 2124909 A	14-05-1990
GB 1461899	A	19-01-1977	CH 592152 A5	14-10-1977
			CA 1045120 A1	26-12-1978
			DE 2532540 A1	05-02-1976
			FR 2279823 A1	20-02-1976
			IT 1039977 B	10-12-1979
			JP 51039728 A	02-04-1976